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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/712,187

11/12/2003

Damon Douglas Brink

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EXAMINER

CAO, ALLEN T

ART UNIT

PAPER NUMBER

2627

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/712,187	Applicant(s) BRINK ET AL.	
	Examiner Allen T. Cao	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rao et al (US. 6,545,842 B2).

3. Rao discloses a magnetic head supporting structure having a magnetic head support structure component (114, 116) having a surface with inclusions (V denticles 170 and 172; figures 3 and 5). Rao does not clearly disclose that there are less than 40 inclusions and having largest dimension between 0.51µm and 21 µm per square millimeter (claims 1 and 2), having hardness 4 or higher on Moh's Scale (claim 2). However, Rao discloses that "both the shape and the size or radius of the dimples 172 may be optimized for different actuator arms 114 and different suspensions 116". Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the magnetic head supporting structure component having are less than 40 inclusions and having largest dimension between 0.51µm and 21 µm per square millimeter (claims 1 and 2), having hardness 4 or higher on Moh's Scale (claim 2) through routine lab experimentation and optimization of number of inclusions, dimension and hardness as recited to reduce aerodynamic drag forces experienced by the actuator assembly, thus reduce read/write errors due to drag-induced vibrations on the heads of the disc drive.

Regarding claims 4-6, Rao et al inherently discloses a swage mount (claims 4), a magnetic head suspension (claim 5), and a magnetic head actuator arm (claim 6).

Regarding claim 3, Rao et al discloses that the head support structure component comprises a metal; However, Rao et al does not disclose that the metal is a "remelted" metal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify/indicate that the metal of Rao et al is a "remelted" metal as recited in claim 3 through an obvious pick and choose the known material in order to improve the reliability characteristics of the magnetic head supporting structure.

Response to Arguments

4. Applicant's arguments filed 3/1/07 have been fully considered but they are not persuasive.

Applicant asserts that Rao et al is not a proper basis for rejection because "Rao does not even disclose or suggest material "inclusions," the hardness of which is of concern in the present patent application (see present patent application, page 15, lines 11-23). On the contrary, Rao discloses "dimples 172" which are concave or hollow indentations (and presumably filled with air rather than any hard particle), and Rao also discloses "shark skin denticles," which are protrusions that are apparently integral with and of common material with the bulk underlying material. See Rao, Figs 1-7. For at

least this fundamental lack of teaching material "inclusions" (as recited in pending claims 1-2)".

The Examiner respectfully points out that in the "WEBSTER'S II New Riverside University Dictionary" discloses that "inclusions" is "a solid, liquid or gaseous foreign body enclosed in a mineral or rock". Air is a gaseous. Therefore, the Examiner maintains the rejection is proper as set forth, supra.

Applicant also asserts that "..... no motivation 'hindsight'"

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re McLaughlin, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For a magnetic head suspension spring. Rao et al discloses a magnetic head suspension spring; however, Rao et al does not disclose that the spring is made of a "remelted" metal. The examiner maintains that the rejection is proper as set forth in the above Office Action.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T. Cao whose telephone number is (571) 272-7569. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allen T Cao/
Primary Examiner, Art Unit 2627

/A. T. C./
Primary Examiner, Art Unit 2627
April 3, 2008